Operation BOLO Research Paper
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Effective military deception (MILDEC) enhances an operation's possibility of success. JP 3-13.4 defines a ruse as a cunning trick designed to deceive the adversary to obtain friendly advantage.[1] Operation BOLO was a tactical deception plan that affected North Vietnamese commanders' ability to make accurate and timely decisions. Robin Olds devised a ruse to deceive the North Vietnamese by developing tactics using visual and emission control (EMCON) procedures. He also gathered intelligence on adversary commanders to formulate a deception game plan and affect the enemy's decision-making capabilities.

The aspects of electronic warfare and the visual arena together form the concept called signature management. Signature management effectively planned and executed with MILDEC promotes advantages in an operation. This case study will focus on the mission planning and execution of Operation BOLO. The first section will be a synopsis of the operation. The second section of the case study will focus on the effectiveness of military deception in Operation BOLO. It will evaluate how MILDEC caused the adversary to arrive at specific false deductions: in particular, how the use of electronic warfare caused the adversary to arrive at misconceptions, and how the deception affected adversary's employment of forces. Finally, this case study will express areas that needed improvement: the element of time during the planning process and answering critical "what if" questions.

On January 2, 1967, with aircraft losses in Southeast Asia on the rise, Col Robin Olds devised and executed a MILDEC operation that depleted half of the North Vietnamese MiG-21 fleet. The mission called Operation BOLO, deceived North Vietnamese commanders into thinking the F-4 Phantoms were the less maneuverable F-105 Thunderchiefs. Prior to Operation BOLO, the F-4s carried a mixed load out of bombs and air-to-air missiles, while the F-105s carried only bombs. During the earlier part of Rolling Thunder, the F-4s flew formation

positions that would sandwich them between F-105 formations at five-minute intervals. If either formation (front or back) of F-105s were attacked by an air threat, the F-4s would jettison their bombs and engage the adversary; in addition, were the North Vietnamese tactics of anti aircraft artillery (AAA) and surface to air missile (SAM) launches.

The introduction of the QRC 160 electronic countermeasures pod loaded on the F-105s neutralized the radars of the North Vietnamese controlling AAA and SAM launches. Unfortunately, the attacks started shifting to the F-4s, which were incapable of flying with the QRC 160 pod, and precluded their escorting the F-105s into the target area. The air war in Southeast Asia had grown intense, and December 2, 1966, became known as "Black Friday". The Air Force lost five aircraft (three F-4s, one RF-4, and one F-105) and the Navy lost three (one F-4 and two A-4 Skyhawks) mostly to AAA and SAM fire.[2] Col Olds wanted to end their losses and began planning Operation BOLO.

The North Vietnamese Air Force consisted of MiG-17s and MiG-21s, the later being the greater threat to the F-105s because of their maneuverability and their air-to-air missile loadout. MiG-21s were configured with two AA-2 (Atoll) infrared missiles. The MiG-21 was a small and light fighter, with excellent air combat maneuvering agility. It relied heavily on Ground Controlled Intercept (GCI) radars, and was extremely effective with "hit-and-run" tactics. "Scoring its first kill in October 1966, in December intercepting MiG-21s shot down two F-105s and forced 20% of all strike sorties to jettison their bomb loads."[3] The North Vietnamese commanders would only launch the MiG-21s when both weather and US formation positions were to their advantage. MiG-21s under GCI control posed a serious threat to the US, who had become predictable by flying the same speeds, routes, and formation positions in packages.

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Olds realized the US was flying the same tactics time after time. The North Vietnamese had adapted in identifying which formations were the Thunderchiefs. Using signature intelligence (SIGINT), the adversary picked up the radiation of the QRC 160 pods, as well as the radio calls and call signs used by F-105 pilots. F-4s could be of little help to the F-105s because of the large space between formations (five-minute intervals) and with the limitations of no beyond visual range (BVR) air-to-air engagements. In planning BOLO, Col Olds went into meticulous detail devising a perfect combination of both a visual and EMCON plan. Olds and his team developed details on force structure, refueling points, altitudes, ingress and egress routes, radio communications, electronic countermeasures with the QRC 160 pod, and a BVR engagement zone.[4] Olds' orchestration and attention to detail demonstrated the time and effort required to plan a MILDEC operation. He hoped the North Vietnamese commanders would take the bait.

Before analyzing the effectiveness of Operation BOLO, a few concepts must be defined. The first is SIGINT, which is the application of military resources and operating techniques to convey or deny selected information through deliberate radiation, re-radiation, alteration, absorption, or reflection of energy.[5] Next is the information dimension where information is collected, processed, stored, disseminated, and protected.[6] How a commander processes and applies information is the cognitive dimension, and where MILDEC specifically focuses on to affect the mind of the decision maker. Finally, "MILDEC is described as being those actions executed to deliberately mislead the adversary decision makers as to friendly military capabilities, intentions, and operations, thereby causing the adversary to take specific actions (or inactions) that will contribute to the accomplishment of the friendly forces mission."[7]

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The success of Operation BOLO depended on the phenomenon known as cognitive dissonance. Cognitive dissonance allows one to ignore vital information simply because it interferes with preexisting concepts of theories.[8] The North Vietnamese formed perceptions on the employment of US forces. They grew accustomed to the five-minute separation between formations of F-105s and F-4s. They grew accustomed to the routes, speeds, and altitudes the US flew. MILDEC seeks to encourage incorrect analysis, causing the adversary to arrive at specific false deductions.[9] In formulating a MILDEC operation, it is much easier to deceive an adversary by playing into their known perceptions, rather than trying to change them.

The North Vietnamese had a robust SIGINT capability at the time. They were able to identify signature emissions and listen to radio calls. Their radars identified US formation positions at range, allowing GCI controllers to guide their MiG-21s to F-105 formations. Deliberately radiating energy directed at SIGINT capabilities encourages incorrect analysis; however, to be effective, this information must be seen as credible by the adversary commander and his staff. Robin Olds and his crew devised a gameplan to fly F-4 formations with the QRC 160 pods in place of the less maneuverable F-105s. The key was deceiving the adversary into believing the Phantoms were Thunderchiefs. The QRC-160 pod effectively deceived the adversary by emitting the same signatures as the F-105s, and at the same time provided effective protection against SAM radars. The use of the QRC 160 pods inhibited the North Vietnamese to five SAM launches and only one round of AAA fire on January 2, 1967.[10] Furthermore, the use of the same call signs and radio transmissions as the F-105s promoted the support of electronic warfare deception.

The second key to success was playing into the adversary's mind on the employment of forces. The cornerstone of this process is intelligence gathering. The intelligence process takes

facts or information and analyzes it, corroborates with many other resources of information to avoid bias, and scrutinizes the significance of the fact in order to create intelligence.[11] BOLO specifically targeted the North Vietnamese information systems. Everything had to be consistent with daily operations to affect the adversary psychologically, leading them to make human factor errors. MILDEC relies upon understanding how the adversary commander and supporting staff think, plan, and use information management to support their efforts.[12] Understanding the capabilities of the adversary's information system and the intelligence gathered on how commanders employed forces, allowed Olds to disguise the strength and the intention of the package. The goal of getting the North Vietnamese to launch MiG fighters allowed Olds and his crew to obtain an advantage with dominance of fighters and orbits around airfields. Flying the same routes, speeds, altitudes, and formations as the F-105s deceived the North Vietnamese commanders into believing it was a normal attack by the US.

Applying the physical, mental, and electronic means misled the adversary as to the strength and intended mission of Olds and his crew. Use of MILDECs during any phase of an operation should help mislead adversaries as to the strength, readiness, locations, and intended missions of friendly forces.[13] BOLO degraded the accuracy of the North Vietnamese information systems with electronic warfare. It gave a false sense of completeness as to the number and intentions of US forces by simulating F-105 formations. Moreover, it caused the North Vietnamese to misjudge the relevance of the attack based on the information received. Olds devised a game plan where F-4s would orbit over North Vietnamese airfields preventing MiGs from landing or evading into China, and in the end, the success of Operation BOLO was a resounding victory – seven MiG-21 kills to zero losses for Olds and his crew.[14] Olds demonstrated the orchestration and level of detail required for a truly successful MILDEC

operation. Either tactic (visual arena, electronic warfare, or intelligence gathering) by itself may have been effective; however, all three used together are what really paid off.

The success of BOLO must not be underestimated; however, lessons were learned for future deception operations. Time worked against Olds in planning BOLO. The F-4s employed with a different flying formation than the F-105s. No time was devoted to train the crews flying the operation to simulate the F-105 formations. The F-4s were flying for the very first time with the QRC 160 pods, which arrived the night prior to Operation BOLO. There was not enough time to evaluate the effectiveness or identify the differences of radar return signatures with pod configuration on the F-4. The F-4 maintenance manuals required the pod to be carried on a fuel tank station. This led to an asymmetrical aircraft configuration, resulting in flying with a wing tank on the centerline store for the first time during Operation BOLO. Olds states the first time he dropped the centerline fuel tank, "it only put about a four-foot hole in the belly of my airplane."[15]

Olds formed biases in the form of deception effectiveness. "First intuitive probabilistic judgments often show substantial biases."[16] Olds developed an extremely detailed schedule of airplanes focusing on timing, formations, and locations of orbits. He identified the what, where, and how, but left out the key concept of when the engagement would occur. Operation BOLO planned to entice the North Vietnamese commanders to launch the MiG-21s; however, time devoted to the adversary's reaction was overlooked. On the deception event schedule, time was required to address the adversary's intelligence and surveillance capabilities. Adversary commanders need time to analyze, process, react, and decide. The time needed to execute the desired action by the adversary must be included in the operational plan. "The whole thing was predicated on a five minute presence in the target area for each flight."[17] Based on fuel

calculations, everything had to go exactly as planned with little thought devoted to the adversary's reaction time options.

Successful deception operations are those that do more than make the target believe or think the deception is true.[18] Based on the "see, think, do" deception methodology in JP3-13.4, the action that the North Vietnamese may have taken as a result of the observations by US forces lacked forefront thought on the part of Robin Olds.[19] In the planning phase of Operation BOLO, Colonel Olds devoted the majority of his time to the employment of US forces, leaving the following scenarios unanswered: Would the North Vietnamese "see" the same radar return signatures of the F -105s? Would the QRC 160 pods transmit the same on the wing of the F-4? What would the North Vietnamese "think" of these different signatures, and was the simulated formation flying of the F-105s effective? What action ("do") would the North Vietnamese take based on the observations seen? What would happen if the MiGs did not launch or if US forces were attacked with AAA and/or SAMS? What if the SAM operators had worked in combination with GCI radars and MiG caps? The result could have been detrimental to the US forces, and aircraft losses would have been almost certain.

MILDEC focuses on desired behavior, not simply misleading an adversary's thinking.[20] Robin Olds is a great fighter pilot; probably one of the best of all time. Even great pilots need a little luck on their side to get the mission accomplished. The intent is to cause adversary commanders to form inaccurate impressions about friendly force dispositions, capabilities, vulnerabilities, and intentions.[21] The lack of alternate planning or unanswered scenarios could be detrimental. It is necessary to be prepared to change the course of action if the adversary does not play into the deception. Adaptability and flexibility are essential, and require the reaction of unplanned events.

Operations employing MILDEC vary according to the assets available and the adversary's mindset. Although not always a guarantor of success, MILDEC can effectively influence the mindset of adversary commanders, improving the possibility of mission accomplishment in future operations. It is easier to deceive an adversary by playing into their known perceptions, rather than trying to change them. Proper planning with regard to time, resources, and accurate intelligence is essential to a successful MILDEC operation.[22] Signature management is one feature that incorporates the physical and electronic means to affect the decision-making capabilities of an adversary. Affecting the enemy's ability to make timely and accurate decisions is fundamental to employ successful MILDEC operations. Planning MILDEC operations requires training and answering tough "what if" questions. In the end, MILDEC contributes to achieving confusion on the enemy's mindset and attaining an advantage that could mean the difference between victory and defeat.

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[1] JP 3-13.4, *Military Deception,* I-7.

[2] Walter J. Boyne, *MiG Sweep* (Air Force Magazine, November 1998), 2.

[3] John Darrell Sherwood, *Old Lionheart*, (Fast Movers: Jet Pilots and the Vietnam Experience, 1999), 73.

[4] Walter J. Boyne, *MiG Sweep* (Air Force Magazine, November 1998), 2.

[5] JP 3-13, *Information Operations*, I-2.

[6] JP 3-13, *Information Operations*, I-2.

[7] JP 3-13, *Information Operations*, I-2.

[8] Joseph W. Caddell, Deception 101—Primer on Deception, 10

[9] JP3-13.4, *Military Deception,* II-2.

[10] Walter J. Boyne, *MiG Sweep,* (Air Force Magazine, November 1998), 5.

[11] JP 2-0, *Joint Intelligence*, II-2.

[12] JP 3-13.4, *Military Deception,* II-1.

[13] JP 3-13.4, *Military Deception,* I-1.

[14] Walter J. Boyne, *MiG Sweep* (Air Force Magazine, November 1998), 2.

[15] Interview with Brig Gen Robin Olds, Corona Harvest #0007971, *Operation BOLO*, Sep 29, 1969, 17.

[16] ORD/CIA Research Division, *Deception Maxims: Fact and Folklore,* Jan 1981, 15.

[17] Interview with Brig Gen Robin Olds, Corona Harvest #0007971, *Operation BOLO*, Sep 29, 1969, 34.

[18] JP 3-13.4, *Military Deception,* IV-1.

[19] JP 3-13.4, *Military Deception,* IV-1.

[20] JP 3-13.4*, Military Deception,* II-1.

[21] JP 3-13.4, *Military Deception,* II-1.

[22] JP 3-13.4, *Military Deception,* xii.

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